

Current Status of All Claims in the Application:

1. (Currently Amended) A guide assembly for reducing lateral movement of a storage tape in a tape drive, the guide assembly comprising:

a rotatable first roller including a perimeter surface, a circumference, a longitudinal axis and a groove disposed into the perimeter surface, the groove having a groove length in a ~~directly~~ direction substantially along the circumference, and a groove bottom that is substantially linear in a direction along the groove length.

2. (Original) The guide assembly of claim 1 wherein the first roller includes a plurality of spaced-apart grooves, each of the grooves having a groove length that is less than the circumference.

3. (Original) The guide assembly of claim 2 wherein the grooves are aligned substantially parallel to the circumference.

4. (Original) The guide assembly of claim 3 wherein the grooves are semi-randomly distributed on the perimeter surface.

5. (Original) The guide assembly of claim 2 wherein the groove length for at least one of the grooves is between approximately 0.1 percent (0.1%) and ninety percent (90%) of the circumference.

6. (Original) The guide assembly of claim 2 wherein the groove length for at least one of the grooves is between approximately one percent (1%) and fifty percent (50%) of the circumference.

7. (Original) The guide assembly of claim 2 wherein the groove length of at least one of the grooves is between approximately 0.01 inches and 1.5 inches.

8. (Original) The guide assembly of claim 2 wherein the percentage of the perimeter surface onto which grooves are disposed is in the range of between approximately one percent (1%) and forty percent (40%).

9. (Original) The guide assembly of claim 2 wherein the percentage of the perimeter surface onto which grooves are disposed is in the range of between approximately one percent (1%) and twenty-five percent (25%).

10. (Original) The guide assembly of claim 1 further including a roller mount, wherein the roller is rotatably mounted on the roller mount approximately on at least a portion of the longitudinal axis of the first roller.

11. (Original) The guide assembly of claim 1 wherein at least one of the grooves has a groove depth that varies between approximately zero inches and 0.02 inches along the length of each groove.

12. (Original) The guide assembly of claim 1 further comprising a second roller including a perimeter surface, a circumference, a longitudinal axis and a groove disposed into the perimeter surface, the groove having a groove length that is less than the circumference.

13. (Original) A tape drive including the guide assembly of claim 1, a take-up reel and a head assembly.

14. (Previously Presented) A guide assembly for reducing lateral movement of a magnetic tape in a tape drive, the guide assembly comprising:

a first roller including a perimeter surface, a circumference, a longitudinal axis and a plurality of discontinuous grooves disposed into the perimeter surface,

one of the grooves having a groove depth that varies in a direction along a length of the groove.

15. (Previously Presented) The guide assembly of claim 14 wherein each of the grooves has a groove depth that varies along the length of the groove.

16. (Original) The guide assembly of claim 15 wherein the groove length of at least one of the grooves is between approximately 0.1 percent (0.1%) and ninety percent (90%) of the circumference.

17. (Original) The guide assembly of claim 15 wherein the groove length of at least one of the grooves is between approximately one percent (1%) and fifty percent (50%) of the circumference.

18. (Original) The guide assembly of claim 15 wherein the percentage of the perimeter surface onto which grooves are disposed is in the range of between one percent (1%) and forty percent (40%).

19. (Original) The guide assembly of claim 15 wherein the percentage of the perimeter surface onto which grooves are disposed is in the range of between one percent (1%) and twenty-five percent (25%).

20. (Original) The guide assembly of claim 15 wherein each of the grooves is aligned substantially parallel to the circumference.

21. (Original) The guide assembly of claim 15 wherein the grooves are semi-randomly distributed on the perimeter surface.

22. (Original) The guide assembly of claim 14 further comprising a second roller including a perimeter surface, a circumference, a longitudinal axis and a groove

disposed into the perimeter surface, the groove having a groove depth that varies along the length of the groove.

23. (Original) The guide assembly of claim 14 wherein the groove depth varies between approximately zero inches and 0.05 inches.

24. (Original) A tape drive including the guide assembly of claim 14 and a take-up reel and a head assembly.

25. (Original) A guide assembly for reducing lateral movement of a magnetic tape of a tape drive, the guide assembly comprising:

a first roller having a perimeter surface, a circumference and a plurality of spaced-apart discontinuous grooves disposed into the perimeter surface, each groove being positioned substantially parallel to the circumference of the roller, each groove having (i) a groove depth that varies between approximately zero inches and 0.02 inches, (ii) a groove length of between approximately 0.1 inches and 0.3 inches, and (iii) a groove width of between approximately 0.005 inches and 0.015 inches.

26. (Previously Presented) A method of manufacturing a tape roller of a guide assembly for a tape drive, the method comprising the steps of:

providing a rotatable roller having a circumference and a perimeter surface; and

forming a groove into the perimeter surface so that the groove is tapered to have a groove depth that varies in a direction along a length of the groove.

27. (Original) The method of claim 26 wherein the step of forming a groove includes forming a plurality of spaced-apart grooves into the perimeter surface so that each groove has a groove length that is less than the circumference.

28. (Original) A method of manufacturing a roller for use in a guide assembly of a tape drive, the method comprising the steps of:

providing a roller portion having a circumference and a perimeter surface;

and

forming a groove into the perimeter surface so that the groove has a groove depth that varies along the length of the groove.

29. (Original) The method of claim 28 wherein the step of forming a groove includes forming a plurality of spaced-apart grooves into the perimeter surface so each groove has a groove depth that varies along the length of the groove.

30. (Previously Presented) A method of reducing lateral tape motion of a storage tape adapted for use in a tape drive, the method comprising the step of:

providing a tape drive having a guide assembly that includes a rotatable first roller having a perimeter surface, a circumference, and a groove disposed into the perimeter surface, the groove having a groove length that is less than the circumference.

31. (Original) The method of claim 30 including the step of rotatably mounting the first roller on a roller mount so that the storage tape passes over at least a portion of the perimeter surface of the first roller during operation of the tape drive.

32. (Original) The method of claim 31 including the step of providing a second roller having a perimeter surface, a circumference, and a groove disposed into the perimeter surface, the groove having a groove length that is less than the circumference; wherein the storage tape passes over at least a portion of the perimeter surface of the second roller during operation of the tape drive.

33. (Previously Presented) A guide assembly for reducing lateral movement of a storage tape in a tape drive, the guide assembly comprising:

a first roller including a perimeter surface, a circumference, a longitudinal axis and a plurality of spaced apart grooves disposed into the perimeter surface, each of the grooves having a groove length that is less than the circumference and at least one of the grooves having a groove length of between approximately 0.01 inches and 1.5 inches.

34. (Previously Presented) A guide assembly for reducing lateral movement of a storage tape in a tape drive, the guide assembly comprising:

a first roller including a perimeter surface, a circumference, a longitudinal axis and a groove disposed into the perimeter surface, the groove having a groove length that is less than the circumference, and a groove depth that varies between approximately zero inches and 0.02 inches along the length of the groove.

35. (Previously Presented) The guide assembly of claim 1 wherein the percentage of the perimeter surface onto which grooves are disposed is greater than 30 percent.

36. (Currently Amended) A method of manufacturing ~~a tape roller of~~ a tape drive, the method comprising the step of:

rotatably mounting a tape roller to a drive housing of the tape drive, the tape roller including a groove having a groove depth that varies over a length of the groove.

37. (Previously Presented) The method of claim 36 wherein the groove has a groove bottom that is substantially linear in a direction along a circumference of the tape roller.

38. (Previously Presented) The method of claim 37 wherein a portion of the groove bottom is substantially planar.